What is claimed is:

1. A power steering system comprising:

a steering shaft operatively associated with a steering mechanism;

a power cylinder having a pair of hydraulic chambers for boosting a steering torque of the steering mechanism;

a first oil passage hydraulically connected to one of the hydraulic chambers of the power cylinder;

a second oil passage hydraulically connected to another of the hydraulic chambers of the power cylinder;

a reversible pump having an oil outlet hydraulically connected to the first oil passage and another oil outlet hydraulically connected to the second oil passage;

a drive unit that drives the reversible pump;

a control unit that outputs a drive signal to the drive unit, based on a steered state of the steering shaft;

a bypass passage that hydraulically connects the first oil passage to the second oil passage;

a switching valve provided in the bypass passage, for switching between an open state and a closed state of the bypass passage;

an oil reservoir that stores hydraulic fluid; and

a first communicating passage that communicates the bypass passage and the oil reservoir via the switching valve to each other.

2. The power steering system as claimed in claim 1, wherein the switching valve closes the bypass passage during being energized and opens the bypass passage during being de-energized.

3. The power steering system as claimed in claim 1 further comprising:

a first oil supply passage that communicates the oil reservoir and the first oil passage to each other;

a first check valve provided in the first oil supply passage, for allowing one-way supply from the oil reservoir to the first oil passage;

a second oil supply passage that communicates the oil reservoir and the second oil passage to each other; and

a second check valve provided in the second oil supply passage, for allowing one-way supply from the oil reservoir to the second oil passage.

4. A power steering system comprising:

a steering shaft operatively associated with a steering mechanism;

a power cylinder having a pair of hydraulic chambers for boosting a steering torque of the steering mechanism;

a first oil passage hydraulically connected to one of the hydraulic chambers of the power cylinder;

a second oil passage hydraulically connected to another of the hydraulic chambers of the power cylinder;

a reversible pump having an oil outlet hydraulically connected to the first oil passage and another oil outlet hydraulically connected to the second oil passage;

a drive unit that drives the reversible pump;

a control unit that outputs a drive signal to the drive unit, based on a steered state of the steering shaft;

a bypass passage that hydraulically connects the first oil passage to the second oil passage;

a switching valve provided in the bypass passage, for switching between an open state and a closed state of the bypass passage;

an oil reservoir that stores hydraulic fluid;

a first communicating passage that communicates the bypass passage and the oil reservoir via the switching valve to each other; and

a second communicating passage that communicates the reversible pump and the oil reservoir to each other.

5. The power steering system as claimed in claim 4, wherein the switching valve closes the bypass passage during being energized and opens the bypass passage during being de-energized.

6. A power steering system comprising:

a steering mechanism having an input portion adapted to steering operation and an output portion adapted to be operatively associated with a wheel, for transferring a steering torque from the input portion to the output portion;

a power cylinder operatively associated with the steering mechanism and having a first hydraulic chamber and a second hydraulic chamber, for boosting the steering torque according to a hydraulic pressure difference between the first hydraulic chamber and the second hydraulic chamber;

a reversible pump unit having a first oil outlet and a second oil outlet, for supplying pressurized hydraulic fluid via either of the first oil outlet and the second oil outlet;

a first oil passage having one end hydraulically connected to the first hydraulic chamber of the power cylinder and one end hydraulically connected to the first oil outlet of the reversible pump unit;

a second oil passage having one end hydraulically connected to the second hydraulic chamber of the power cylinder and one end hydraulically connected to the second oil outlet of the reversible pump unit;

a bypass passage having one end hydraulically connected to the first oil passage and one end hydraulically connected to the second oil passage;

a switching valve provided at a midpoint of the bypass passage, for switching between an open state and a closed state of the bypass passage;

an oil reservoir hydraulically connected to the bypass passage via the switching valve; and

a control unit, for controlling an operation of the reversible pump unit and an operation of the switching valve.

7. The power steering system as claimed in claim 6, wherein the switching valve closes the bypass passage during being energized and opens the bypass passage during being de-energized.

8. The power steering system as claimed in claim 6 further comprising:

a first oil supply passage hydraulically connected to the first oil passage at one end and to the oil reservoir at one end;

a first check valve provided at a midpoint of the first oil supply passage, for allowing one-way flow from the oil reservoir to the first oil passage;

a second oil supply passage hydraulically connected to the second oil passage at one end and to the oil reservoir at one end; and

a second check valve provided at a midpoint of the second oil supply passage, for allowing one-way flow from the oil reservoir to the second oil passage.

9. The power steering system as claimed in claim 6, wherein the reversible pump unit is hydraulically connected to the oil reservoir.

10. The power steering system as claimed in claim 9, wherein the switching valve closes the bypass passage during being energized and opens the bypass passage during being de-energized.

11. The power steering system as claimed in claim 9 further comprising:

a first oil supply passage hydraulically connected to the first oil passage at one end and to the oil reservoir at one end;

a first check valve provided at a midpoint of the first oil supply passage, for allowing one-way flow from the oil reservoir to the first oil passage;

a second oil supply passage hydraulically connected to the second oil passage at one end and to the oil reservoir at one end; and

a second check valve provided at a midpoint of the second oil supply passage, for allowing one-way flow from the oil reservoir to the second oil passage.

12. A power steering system comprising:

steering means for transferring a steering torque;

a power cylinder operatively associated with the steering mechanism and having a first hydraulic chamber and a second hydraulic chamber, for boosting the steering torque according to a hydraulic pressure difference between the first hydraulic chamber and the second hydraulic chamber;

reversible pumping means for supplying pressurized hydraulic fluid;

first connecting means for hydraulically connecting the first hydraulic chamber of the power cylinder to the reversible pumping means;

second connecting means for hydraulically connecting the second hydraulic chamber of the power cylinder to the reversible pumping means;

bypass means for hydraulically connecting the first oil passage to the second oil passage;

switching means for switching between an open state and a closed state of the bypass means;

oil reserving means for storing hydraulic fluid;

communicating means for hydraulically connecting the bypass means to the oil reserving means via the switching means; and

control means for controlling an operation of the reversible pumping means and an operation of the switching means.

13. A method of charging a power steering system with hydraulic fluid, the power steering system including a steering shaft operatively associated with a steering mechanism, a power cylinder having a pair of hydraulic chambers for boosting a steering torque of the steering mechanism, a first oil passage hydraulically connected to one of the hydraulic chambers of the power cylinder, a second oil passage hydraulically connected to another of the hydraulic chambers of the power cylinder, a reversible pump having an oil outlet hydraulically connected to the first oil passage and another oil outlet hydraulically connected to the second oil passage, a drive unit that drives the reversible pump, a control unit that outputs a drive signal to the drive unit, based on a steered state of the steering shaft, a bypass passage that hydraulically connects the first oil passage to the second oil passage, a switching valve provided in the bypass passage, for switching between an open state and a closed state of the bypass passage, an oil reservoir that stores hydraulic fluid, and a first communicating passage that communicates the switching valve and the oil reservoir to each other, the method comprising:

a first operation of opening the switching valve;

a second operation of evacuating air in the power steering system via the first communicating passage; and

a third operation of charging the power steering system with hydraulic fluid via the first communicating passage.

14. The method of charging a power steering system with hydraulic fluid as claimed in claim 13, wherein:

the switching valve closes the bypass passage during being energized and opens the bypass passage during being de-energized; and

the first operation opens the switching valve by de-energizing the switching valve.

15. The method of charging a power steering system with hydraulic fluid as claimed in claim 13, wherein the power steering system further comprises:

a first oil supply passage that communicates the oil reservoir and the first oil passage to each other;

a first check valve provided in the first oil supply passage, for allowing one-way supply from the oil reservoir to the first oil passage;

a second oil supply passage that communicates the oil reservoir and the second oil passage to each other; and

a second check valve provided in the second oil supply passage, for allowing one-way supply from the oil reservoir to the second oil passage.

16. A method of charging a power steering system with hydraulic fluid, the power steering system including a steering shaft operatively associated with a steering mechanism, a power cylinder having a pair of hydraulic chambers for boosting a steering torque of the steering mechanism, a first oil passage hydraulically connected to one of the hydraulic chambers of the power cylinder, a second oil passage hydraulically connected to another of the hydraulic chambers of the power cylinder, a reversible pump having an oil outlet hydraulically connected to the first oil passage and another oil outlet hydraulically connected to the second oil passage, a drive unit that drives the reversible pump, a control unit that outputs a drive signal to the drive

unit, based on a steered state of the steering shaft, a bypass passage that hydraulically connects the first oil passage to the second oil passage, a switching valve provided in the bypass passage, for switching between an open state and a closed state of the bypass passage, an oil reservoir that stores hydraulic fluid, a first communicating passage that communicates the bypass passage and the oil reservoir via the switching valve to each other, and a second communicating passage that communicates the reversible pump and the oil reservoir to each other, the method comprising:

a first operation of opening the switching valve; and

a second operation of charging the power steering system with hydraulic fluid via the second communicating passage.

17. The method of charging a power steering system with hydraulic fluid as claimed in claim 16, wherein:

the switching valve closes the bypass passage during being energized and opens the bypass passage during being de-energized; and

the first operation opens the switching valve by de-energizingthe switching valve.

18. A method of controlling an operation of a power steering system including a steering mechanism having an input portion adapted to steering operation and an output portion adapted to be operatively associated with a wheel, for transferring a steering torque from the input portion to the output portion, a power cylinder operatively associated with the steering mechanism and having a first hydraulic chamber and a second hydraulic chamber, for boosting the steering torque according to a hydraulic pressure difference between the first hydraulic chamber and the second hydraulic chamber, a reversible pump unit having a first oil outlet and a second oil outlet, for supplying pressurized hydraulic fluid via either of the first oil outlet and the second

oil outlet, a first oil passage having one end hydraulically connected to the first hydraulic chamber of the power cylinder and one end hydraulically connected to the first oil outlet of the reversible pump unit, a second oil passage having one end hydraulically connected to the second hydraulic chamber of the power cylinder and one end hydraulically connected to the second oil outlet of the reversible pump unit, a bypass passage having one end hydraulically connected to the first oil passage and one end hydraulically connected to the second oil passage, a switching valve provided at a midpoint of the bypass passage, for switching between an open state and a closed state of the bypass passage, an oil reservoir hydraulically connected to the bypass passage via the switching valve, and a control unit, for controlling an operation of the reversible pump unit and an operation of the switching valve, the method comprising:

detecting an initial steering torque;

determining whether the initial steering torque is greater than or equals to a first predetermined value;

closing the switching valve and energizing the reversible pump unit, when the initial steering torque is greater than or equals to the first predetermined value;

determining whether the reversible pump unit is operative or inoperative, after energizing the reversible pump unit;

opening the switching valve and de-energizing the reversible pump unit, when the reversible pump unit is inoperative;

detecting a current steering torque, when the reversible pump unit is operative;

determining whether the current steering torque is less than or equals to a second predetermined value; and

opening the switching valve, when the current steering torque is less than or equals to the second predetermined value.